Abstract

The invention provides a unitary retaining ring for use in a CMP apparatus. The retaining ring features a pad engaging surface which is designed to be flat and planar when the retaining ring is mounted to a carrier of the CMP apparatus. The pad engaging surface includes portions which surround the wafer and contact a pad and slurry on the CMP apparatus. A plurality of mounting features are provided along a carrier engaging surface of the ring. The mounting features are installed to cause localized compressive stresses in the material when in a de-mounted state. Upon mounting to a carrier of the CMP apparatus under specified torque or force conditions, tensile stresses are applied to the material of the ring resulting in a flat and planar mounted front surface.